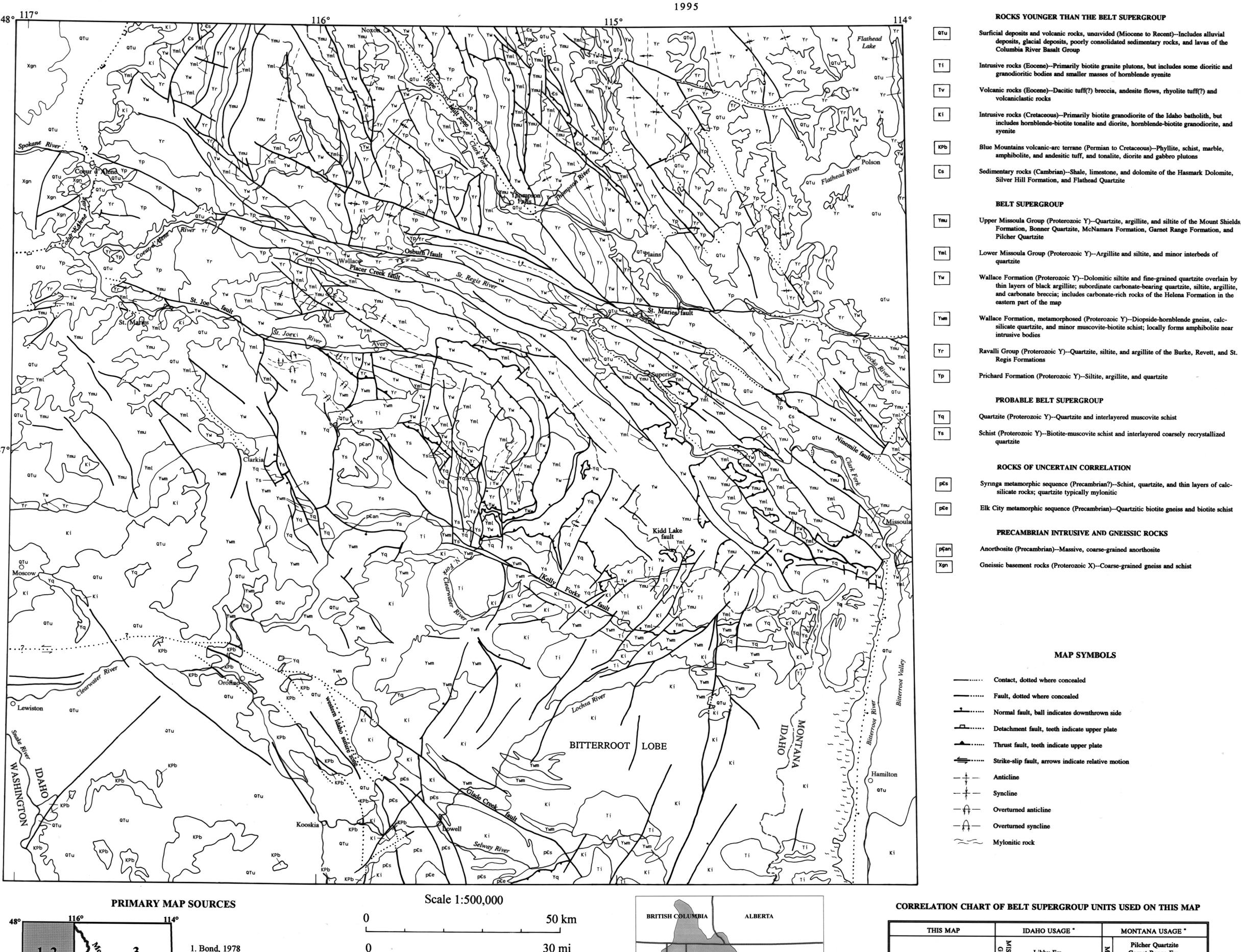
GEOLOGIC MAP OF THE BELT SUPERGROUP IN NORTH-CENTRAL IDAHO AND WESTERN MONTANA

Compiled by Reed S. Lewis



	THIS MAP	IDAHO USAGE *	MONTANA USAGE *
NA	Ymu- upper Missoula Group	GROUP Libby Fm. Striped Peak Fm.	Pilcher Quartzite Garnet Range Fm. McNamara Fm. Bonner Quartzite Mount Shields Fm.
	Ymt- lower Missoula Group	Wallace Fm., upper member	Shepard Fm. Snowslip Fm.
	Yu- Wallace Fm.	Wallace Fm., middle member Wallace Fm., lower member	Helena Fm. Empire Fm.
ate extent	Yr- Ravalli Group	Ravalli Group	Ravalli Group
upergroup sures	Yp- Prichard Fm.	Prichard Fm.	Prichard Fm.

* based on stratigraphy in the Coeur d'Alene, Idaho, and Missoula, Montana areas summarized by Winston (1986)

EXPLANATORY NOTES

This compilation provides a regional overview of stratigraphy and structure in north-central Idaho and western Montana. Emphasis is placed on Proterozoic sedimentary rocks of the Belt Supergroup, which crop out over much of the area. Younger rock units, particularly those of Tertiary and Quaternary age, have in many cases not been subdivided. No attempt has been made to provide detailed rock descriptions. These are available in the original map sources cited.

Stratigraphy

MAP UNITS

Because of the small map scale, many of the individually mapped formations within the Belt Supergroup had to be combined at the group level for compilation purposes. The term Ravalli Group encompasses the same formations (Burke, Revett, and St. Regis) used on previous maps (e.g. Harrison and others, 1986). More controversial is the makeup of the Missoula Group. On this map the Missoula Group has been subdivided into lower and upper sections. The lower section is primarily argillite and siltite and includes the Snowslip and Shepard Formations as mapped in Montana, and the upper member of the Wallace formation as mapped in Idaho (following Winston, 1986). The upper section has at its base the more quartzitic Mount Shields Formation, and correlative rocks of the Striped Peak

One of the most significant areas of disagreement among recent workers is the formational assignment of argillite and siltite present 35 km southeast of Avery, Idaho. Harrison and others (1986) interpret these rocks as part of the Prichard Formation, thrust over younger rocks of the Wallace Formation. On previous maps of Hietanen (1968) and Reid and others (1981) these rocks are interpreted as being in depositional contact with the middle member of the Wallace Formation, and are assigned to the upper Wallace. On this map these fine-grained rocks are also assigned to the upper Wallace (or lower Missoula group) based on lithologic similarities to exposures of the upper Wallace present to the northwest, and lack of evidence for thrust faulting at their basal contact.

The distinctive carbonate-rich rocks of the lower and middle members of the Wallace Formation can be identified even where metamorphosed, and their metamorphic equivalents are listed under the heading Belt Supergroup. Highly metamorphosed quartzite (Yq) and schist (Ys), common near the Bitterroot lobe and northwest of it, are more difficult to correlate to specific formations within the Belt Supergroup. Much of the schist was once probably argillite and siltite of the Prichard Formation, but similar fine-grained rocks are present throughout the Belt sequence. Also, some of the schist may predate the Belt Supergroup, as shown on the map of Harrison and others (1986). Much of the quartzite was probably part of the Ravalli group, but quartzite also occurs in the Prichard and Wallace Formations, as well as in the upper part of the Missoula Group. Even less certain is the stratigraphic assignment of the Syringa metamorphic sequence. The age of these rocks is poorly constrained and they may be Paleozoic or Mesozoic rather than Precambrian. The Elk City metamorphic sequence is known to be Precambrian, but its relationship to the Belt Supergroup is uncertain.

Significant faults in the map area include steep, west-northwest striking faults of the Lewis and Clark line such as the Osburn and Placer Creek faults. These faults have a complex history, and may have had multiple periods of motion (Harrison and others, 1986). The Kelly Forks and Glade Creek faults also strike west-northwest, and may relate to motion along the Lewis and Clark line. The Glade Creek fault marks the southwesternmost extent of rocks known to be part of the Belt Supergroup (Lewis and others, 1992b). The northwest-striking Hope fault zone has apparent right-lateral and down-to-the-southwest displacement. East of the Hope fault zone are several thrust faults that strike north-northwest and place older rocks over younger rocks. To the south, a number of low-angle faults that place younger rocks over older rocks, such as the Kidd Lake fault, are also designated as thrust faults on the map. These low-angle faults may instead be detachment faults, but have been shown as thrust faults because this was the interpretation of the mappers who worked in these areas. A series of northwest-striking faults in the southwestern part of the map parallel the boundary between the accreted Blue Mountains volcanic-arc terrane and continental rocks to the east. This boundary (the western Idaho suture zone) turns westerly near Orofino. Idaho, and strikes east-west between Lewiston and Moscow. Mylonitic rocks along the eastern side of the Bitterroot lobe are the footwall of a large north-south striking detachment fault This fault is cut by a steeper normal fault (shown on the map) that forms the western side of the Bitterroot Valley. A second large detachment fault is present in the northwestern part of the map. The lower plate of this fault consists of gneissic rocks older than the Belt Supergroup.

MAP SOURCES

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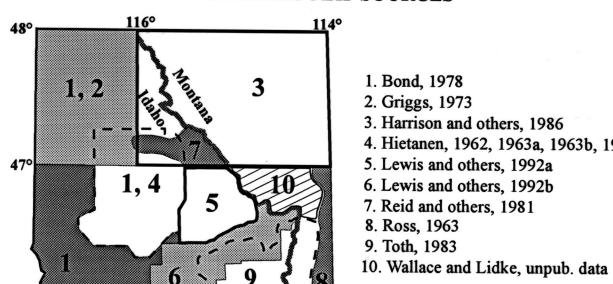
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2. Griggs, 1973 3. Harrison and others, 1986 4. Hietanen, 1962, 1963a, 1963b, 1968 5. Lewis and others, 1992a 6. Lewis and others, 1992b 7. Reid and others, 1981 8. Ross, 1963 9. Toth, 1983

Base is adapted from 1:500,000 scale state maps of Idaho and Montana published by the U.S. Geological Survey. Lambert conformable conic projection based on standard parallels 33° and 45°.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S.

